

WHAT IS CLAIMED IS:

1. An image generating method in which intermediate frames are generated based on key frames and corresponding point data between the key frames, the method comprising:

determining a processing performance of an apparatus which generates the intermediate frames; and

determining resolution of the intermediate frames to be generated in accordance with the determined processing performance.

2. A method according to Claim 1, further comprising generating intermediate frames by performing an interpolation computation on the key frames at the determined resolution.

3. A method according to Claim 1, wherein the determining the processing performance comprises determining if there is an optional graphics accelerator available for use by the apparatus.

4. A method according to Claim 1, wherein the determining the processing performance comprises determining a processing speed of a CPU of the apparatus.

5. A method according to Claim 1, wherein said determining the processing performance is carried out by the apparatus.

6. A method according to Claim 1, wherein said determining the processing performance comprises experimentally generating intermediate frames in the apparatus and determining the processing performance based thereon.

7. An image generating method, comprising:

generating corresponding point data between key frames by utilizing a multiresolutional critical point filter;

generating intermediate frames based on the key frames and the corresponding point data;

determining a processing performance of an apparatus which generates the intermediate frames; and

determining resolution of the intermediate frames to be generated in accordance with the determined processing performance.

8. An image generating method in which intermediate frames are generated based on key frames and corresponding point data between the key frames, the method comprising:

determining a processing performance of an apparatus which generates the intermediate frames;

determining a resolution of the intermediate frames which belongs to a range in which real-time reproduction is possible using the determined processing performance; and  
generating the intermediate frames at the determined resolution.

9. A method according to Claim 8, further comprising:

generating the intermediate frames at a lower speed in the event that it is determined that real-time reproduction is difficult even at lower resolution; and

converting and recording the generated intermediate frames to a movie file.

10. A method according to Claim 8, wherein said determining the processing performance comprises experimentally generating intermediate frames in the apparatus and determining the processing performance based thereon.

11. An image generating method, comprising:

generating corresponding point data between key frames by utilizing a multiresolutional critical point filter;

generating intermediate frames based on the key frames and the corresponding point data;

determining a processing performance of an apparatus

which generates the intermediate frames;

determining resolution of the intermediate frames at which real-time reproduction is possible by the determined processing performance; and

generating the intermediate frames at the determined resolution.

12. An image generating apparatus which generates intermediate frames based on key frames and corresponding point data between the key frames, the apparatus comprising:

a performance specifying unit which determines a processing performance of the apparatus; and

a resolution decision unit which determines resolution of the intermediate frames to be generated according to the processing performance determined by said performance specifying unit.

13. An apparatus according to Claim 12, further comprising an intermediate frame generator which generates intermediate frames according to the resolution determined by said resolution decision unit.

14. An apparatus according to Claim 12, wherein said performance specifying unit determines the processing

performance by determining whether or not there is an optional accelerator available for use by the apparatus.

15. An apparatus according to Claim 12, wherein said performance specifying unit determines the processing performance by determining a processing speed of a CPU of the apparatus.

16. An apparatus according to Claim 12, wherein said performance specifying unit experimentally generates intermediate frames in the apparatus and determines the processing performance of the apparatus based thereon.

17. An image generating apparatus, comprising:

a matching processor which computes a matching of key frames and generates corresponding point data between the key frames by utilizing a multiresolutional critical point filter;

an intermediate frame generator which generates intermediate frames based on the key frames and the corresponding point data;

a performance specifying unit which determines a processing performance of the apparatus; and

a resolution decision unit which determines resolution of the intermediate frames to be generated according to the

processing performance determined by said performance specifying unit.

18. An image generating apparatus which generates intermediate frames based on key frames and corresponding point data between the key frames, the apparatus comprising:

a performance specifying unit which determines a processing performance of the apparatus;

a resolution decision unit which determines a resolution of the intermediate frames at which real-time reproduction is possible using the specified processing performance; and

an intermediate frame generator which generates the intermediate frames at the resolution determined by said resolution decision unit.

19. An apparatus according to Claim 18, wherein, when the resolution decision unit determines that real-time generation is only possible below a predetermined resolution, said resolution decision unit notifies said intermediate frame generator to abandon real-time processing and to generate the intermediate frames at a predetermined higher resolution,

said apparatus further comprising a converter which converts the generated intermediate frames to a movie file.

20. An apparatus according to Claim 18, wherein said performance specifying unit experimentally generates intermediate frames in said apparatus and determines the processing performance by measuring an amount of time it takes to generate the intermediate frames.

21. An apparatus according to Claim 18, wherein said performance specifying unit determines the processing performance based on a user's instruction.

22. An apparatus according to Claim 18, further comprising a communication unit which externally acquires the key frames and the corresponding point data.

23. An image generating apparatus, comprising:

a matching processor which computes a matching of key frames and generates corresponding point data between the key frames by utilizing a multiresolutional critical point filter;

a first intermediate frame generator which generates intermediate frames based on the key frames and the corresponding point data;

a performance specifying unit which determines a processing performance of the apparatus;

a resolution decision unit which determines a resolution

of intermediate frames at which real-time reproduction is possible using the determined processing performance; and

a second intermediate frame generator which generates the intermediate frames at the resolution determined by said resolution decision unit.

24. An image generating system comprising a server and a client wherein:

the server comprises:

a server storage unit which stores key frames and corresponding point data therefor; and

a communication unit which transmits the key frames and the corresponding point data to the client;

the client comprises:

a communication unit which acquires the transmitted key frames and corresponding point data; and

a client storage unit which stores the acquired key frames and corresponding point data,

wherein said server or said client includes a performance specifying unit which determines a processing performance of the client,

said client further comprising:

a resolution decision unit which determines a resolution of intermediate frames which are capable of being



reproduced at a desired speed using the determined processing performance; and

an intermediate frame generator which generates the intermediate frames at the determined resolution.

25. A system according to Claim 24, wherein said server computes a matching between the key frames by extracting critical points thereof, and then generates the corresponding point data.

26. A computer program executable by a computer, the program comprising the functions of:

determining a processing performance of an apparatus which generates intermediate frames based on key frames and corresponding point data therefor; and

determining a resolution of the intermediate frames to be generated according to the determined processing performance.

27. A computer program according to Claim 26, further comprising generating the intermediate frames according to the determined resolution.

28. A computer program executable by a computer, the program

comprising the functions of:

determining a processing performance of an apparatus which generates intermediate frames based on key frames and corresponding point data therefor;

determining a resolution of the intermediate frames at which real-time reproduction is possible using the determined processing performance; and

generating the intermediate frames at the determined resolution.

29. A computer program according to Claim 28, further comprising:

generating the intermediate frames at a lower speed in the event that it is determined that real-time reproduction is difficult even at lower resolution; and

converting the generated intermediate frames to a movie file so as to be recorded.

30. An image generating method for generating intermediate frames comprising:

acquiring key frames and corresponding point data related to the key frames;

determining a processing performance of an apparatus which generates the intermediate frames; and

determining a resolution for the intermediate frames according to the determined processing performance.

31. An image generating apparatus for generating intermediate frames comprising:

an acquisition unit for acquiring key frames and corresponding point data related to the key frames;

a performance specifying unit which determines a processing performance of the image generating apparatus; and

a resolution decision unit which determines a resolution for the intermediate frames according to the determined processing performance.